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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/686,304	10/11/2000	Paul W. Dent	8194-416/P11717-US1	5164

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EXAMINER	
BAYARD, EMMANUEL	
ART UNIT	**PAPER NUMBER**
2631	6

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/686,304	DENT, PAUL W.	
	Examiner	Art Unit	
	Emmanuel Bayard	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-96* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-54 and 62-96* is/are allowed.

6)☒ Claim(s) *55 and 58-61* is/are rejected.

7)☒ Claim(s) *56 and 57* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to amendment filed on 6/7/04 in which claims 1-96 are pending. The applicant's amendments have been fully considered but they are moot based on the new ground of rejection.

Specification

1. The disclosure is objected to because of the following informalities: In pages 14-17 of the specification, elements 310, 312, 315, 320-322 are being recited as reference to fig.3. However fig.3 of the drawing does not show these elements.

Appropriate correction is required.

Drawings

2. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 55 is rejected under 35 U.S.C. 102(e) as being anticipated by Wildauer et al U.S. Patent No 5,903,555.

As per claim 55, Wildauer discloses a method of communicating a bitstream, comprising: modulo-2 adding (see figs.2-4 elements 50, 60, 150, 160 and col.6, lines 55-667) each bit of a binary spreading code of length N in turn to a first group of bits of the bitstream to generate a revised first group of bits; generating a first symbol from the revised first group of bits using a signal constellation that maps (see figs. 2-3 elements 70, 180 and col.6, lines 63-67 and col.7, lines 43-45) the first group of bits and a complement of the first group of bits to diametrically opposite constellation points; and transmitting (see fig.3 element 210 and col.7, lines 55-59) the first symbol in a communications medium.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wildauer et al U.S. Patent No 5,903,555 in view of Odenwalder et al U.S. Patent No 6,480,521 B1.

As per claim 58, Wildauer teaches all the features of the claimed invention except the first symbol in a communications medium is preceded by scrambling the first symbol according to a scrambling code; and wherein transmitting the first symbol in a communications medium comprises transmitting the scrambled first symbol in the communications medium.

Odenwalder teaches scrambling the first symbol according to a scrambling code; and wherein transmitting the first symbol in a communications medium comprises transmitting the scrambled first symbol in the communications medium (see col.7, lines 63-67 and col.8, lines 1-6 and col.12, lines 8-17).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Odenwalder into Wildauer as maps scrambled symbols to different values of +1 or –1 as taught by Odenwalder (see col.12, lines 13-17).

As per claims 59-60, Odenwalder includes, wherein the scrambling code comprises a complex sequence (see col12, line 17). Furthermore implementing such teaching into Wildauer would have been obvious to one skilled in the art as to map the scrambled symbols to different values of +1 or –1 as taught by Odenwalder (see col.12, lines 13-17).

As per claim 61, Odenwalder includes, wherein scrambling the first symbol according to a scrambling code comprises multiplying the first symbol by a scrambling sequence value (see col.8, lines 6-15). Furthermore implementing such teaching into Wildauer would have been obvious to one skilled in the art as to map the scrambled symbols to different values of +1 or –1 as taught by Odenwalder (see col.8, lines 10-15 and col.12, lines 13-17).

Allowable Subject Matter

5. Claims 1-54 and 62-96 are allowed over the prior art of record.

6. Claims 56-61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The prior art of record fail to anticipate or render obvious the following recited features. The following is a statement of reasons for the indication of allowable subject matter: A controller operatively associated with the variable error correction encoder, the variable symbol generator and the variable spreader, that selects respective combinations of coding rate, signal constellation and spreading code applied to the respective bit streams such that the spread symbol streams transmitted from the network station are spread according to mutually orthogonal spreading codes as recited in claim 1. A variable symbol generator that generates a symbol from a group of bits of the error correction encoded bitstream according to a selected one of the plurality of selectable signal constellation as recited in claim 16. A variable decoder that decodes the symbol estimate according to a selected combination of an error code and a signal constellation

of a plurality of selectable signal constellation as recited in claim 48. Translating the second group of bits to the first group of bits; modulo-adding each bit of a binary spreading code of length N in turn to the translated second group of bits to generate a revised translated second group of bits; generating a second symbol from the revised translated second group of bits using the signal constellation that maps the first group of bits and a complement of the first group of bits to diametrically opposite constellation points as recited in claims 56 and 67. Translating respective ones of the generated groups of bits to respective bit patterns using a one to one mapping such that given sub-groups of bits in the bit patterns have an arithmetic value indicative of the angular position of the symbols as recited in claim 62. Repeating a respective one of multi-bit symbols using the corresponding group of bits a respective number of times with the respective recipient and scrambling the repeated multi-bit symbols according to an orthogonal spreading code selected from a set of orthogonal spreading codes as recited in claim 65. Generating respective symbols according to a signal constellation from respective groups of bits of the encoded bitstream such that a first bit position of the groups of bits correlate to clusters of constellation points of the signal constellation and a second position of the groups of bits correlate to relative positions within the cluster of constellation points as recited in claims 45 and 90. Decoding the first and second symbols estimate according to a first and second combination of error correction code and a first and second signal constellation as recited in claim 93.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ghobrial et al U.S. patent No 6,438,156 B1 teaches a stepwise adaptive finite impulse response filter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 703 308-9573. The examiner can normally be reached on Monday-Friday (4:30PM-10Pm) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 703 306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Bayard
Primary Examiner
Art Unit 2631